

Ctenodus, that in a letter lately received, Mr. Harvey tells me that at an advanced stage of growth, the receptacles of the individuals with tetrasporic fruit present a pore corresponding with each cell, by which the spores escape.

XXXIV.—*Description of a Fossil Molar Tooth of a Mastodon discovered by Count Strzlecki in Australia.* By Prof. OWEN, F.R.S.

THE large fossil femur, transmitted to England in 1842 by Lieut.-Col. Sir T. L. Mitchell, Surveyor-General of Australia, from the alluvial or tertiary deposits of Darling Downs, and described in the 'Annals of Natural History' for January 1843, p. 8. fig. 1, gave the first indication of the former existence of a large Mastodontoid quadruped in Australia.

The portion of tooth described and figured in the same communication (p. 9. figs. 2 and 3), presenting characters very like those of the molars of both the *Mastodon giganteus* as well as of the *Dinotherium*, and being from the same stratum and locality as the femur with which it was transmitted, was regarded by me as having most probably belonged to the same animal; and, on the authority of drawings subsequently received from Sir T. Mitchell, was referred to the genus *Dinotherium**

Having since received specimens of portions of lower jaws with teeth identical in structure with the fragment figured in my first communication to the 'Annals' (p. 9. figs. 2 and 3), I find that the reference of that portion of tooth to the genus *Dinotherium* was premature and erroneous. The extinct species to which it belonged does, indeed, combine molar teeth like those of the *Dinotherium* with two large incisive tusks in the lower jaw, but these tusks incline upwards instead of bending downwards, and are identical in form and structure with the tusk from one of the bone-caves of Wellington Valley, described by me in Sir T. Mitchell's 'Expeditions into the Interior of Australia,' vol. ii. 1838, p. 362. pl. 31. figs. 1 and 2, as indicative of a new genus and species of gigantic marsupial animal†, to which I gave the name of *Diprotodon australis*.

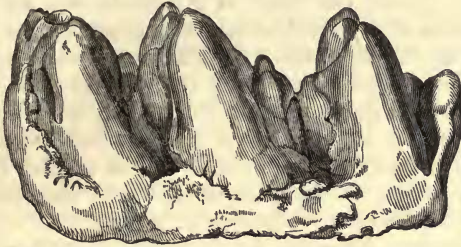
It is not my present object to describe these most interesting additional fossils of the *Diprotodon*, or to enter into the question whether the great femur before alluded to belonged, like the fragment of tooth transmitted with it, to the *Diprotodon*, or to a

* Annals of Natural History, May 1843, p. 329. fig. 1.

† See also my paper "On the Classification of Marsupialia," Zool. Trans. vol. ii. p. 332, in which the *Diprotodon* is placed with the Wombat in the family '*Phascolomyidæ*.'

different and larger animal; but briefly to make known the more decisive evidence of the former existence of a large Mastodontoid quadruped in Australia, which is afforded by the tooth figured, on the scale of half an inch to one inch, in the subjoined cuts.

Fig. 1.

*Mastodon australis*, half nat. size.

If these figures be compared with those of the molar teeth of the *Mastodon angustidens*, reduced to the same scale, in Cuvier's 'Ossemens Fossiles,' 4to, vol. i., 'Divers Mastodontes,' pl. 2. fig. 11, pl. 3. fig. 2, or with that of the more abraded molar, pl. 1. fig. 4, they will be seen to present a generic and almost specific identity.

The close approximation of the Australian Mastodon to the *Mast. angustidens* will be appreciated by a comparison of fig. 1 with a similar direct side-view of an equally incompletely-formed molar given by Cuvier, *loc. cit.* pl. 1. fig. 1; but this tooth, being from a more posterior part of the jaw, has an additional pair of pyramidal eminences; and if the proportions of the figure of half an inch to an inch be accurate, the European tooth is rather

Fig. 2.

*Mastodon australis*, half nat. size.

smaller than the Australian fossil, notwithstanding its additional tubercles and more backward position in the jaw.

The Australian fossil tooth here described was brought by a native to Count Strzlecki, whilst that enterprising and accomplished traveller was exploring the ossiferous caves in Wellington:

Valley. The native stated that the fossil was taken out of a cave further in the interior than those of Wellington Valley, and which Count Strzlecki was deterred from exploring by the hostility of the tribe then in possession of the district. With this circumstantial account, communicated to me by Count Strzlecki when he obligingly placed the fossil in my hands, and with the previous indication of a large Mastodontoid quadruped in the femur transmitted by Sir T. Mitchell from Darling Downs, there seems no ground for scepticism as to the veritable Australian origin of the molar tooth in question, notwithstanding its close similarity with the *Mastodon angustidens* of the European tertiary strata. It is partially mineralized and coated by the reddish ferruginous earth characteristic of the Australian fossils discovered in the Wellington ossiferous caves by Sir T. Mitchell.

The amount of difference between the Australian molar and those of the European *Mastodon angustidens*, though small, equals that by which the molars of the *Mastodon Andium* are distinguished from the molars of the *Mastodon angustidens*; and if species so nearly allied have left their remains in countries so remote as France and Peru, still more if the *Mastodon angustidens* or *longirostris* formerly existed, as has been affirmed, in North America, we need feel the less surprise at the discovery of a nearly allied species in the continent of Australia.

The fossil in question is the crown of an incompletely formed molar, with the summits of its mastoid or udder-shaped eminences entire, its fangs undeveloped, and its base widely excavated by the unclosed pulp-cavity. It supports six principal mastoid eminences in three transverse pairs, with a narrow ridge at the anterior part of the base of the crown, and a small quadrituberculate talon or basal prominence posteriorly: the three transverse eminences are joined together by a pair of small tubercles at the basal half of each interspace, placed in the long axis of the crown, and rather to the outer side of the middle line of the grinding surface, fig. 2.

The length or antero-posterior diameter of the crown is four inches ten lines: the breadth of the posterior pair of tubercles is two inches eleven lines: the height of the middle eminences from the base of the crown is two inches six lines: the tooth is apparently the fourth molar of the left side of the lower jaw. In comparison with a corresponding molar in the same state of growth of the *Mastodon longirostris** of Kaup, a cast of which is now before me, the Australian molar differs in having the principal transverse eminences more compressed antero-posteriorly in pro-

* If this species be distinct from the *Mast. angustidens* of Cuvier, the molar teeth seem to me to offer precisely the same characters.

portion to their height, and tapering to sharper summits, which however are obtuse and bifid. The breadth of the tooth slightly increases to the posterior pair of eminences, whilst in the *Mastodon longirostris* and *angustidens* the crown maintains the same breadth, or more commonly becomes narrower from the anterior to the posterior pair of mastoid eminences.

Other differences observable on a minute comparison are too trivial to deserve notice, especially when observed in only a single example of a complex molar tooth. In the Australian specimen under consideration the mastodontal characters are unmistakeable, and the resemblance to the molar teeth of the *Mastodon angustidens* is very close. The specific distinction of the Australian Mastodon rests, at present, only on the slight differences pointed out in the form of the mastoid eminences and the contour of the crown of the molar tooth.

The question may arise, whether identity of generic characters in the molar teeth of an extinct Australian mammal with those of the *Mastodon* can support the inference that the remaining organization of the Proboscidian Pachyderm coexisted with such a form of tooth? The analogy of the close mutual similarity which exists in the molar teeth of the Tapir, Dinotherium, Manatee and Kangaroo suggests the surmise that the mastodontal type of molar teeth might also have been repeated in a gigantic Marsupial genus which has now become extinct; and such an idea naturally arose in my mind after having received evidence of the marsupial character of the *Diprotodon* and *Nototherium**, two extinct Australian genera, with the tapiroid type of molars, represented by species as large as a Rhinoceros.

The more complex character of the molars of the *Mastodon*, and the restriction of that character, so far as is now known, to that genus only, makes it much more probable, however, that the molar here described belonged to a true *Mastodon*, and the species may be provisionally termed *Mastodon australis*.

London, August 22, 1844.

XXXV.—*An Attempt to Classify the Tetrabranchiate Cephalopods.* By WILLIAM KING, Curator of the Museum of the Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne.

THE following observations on the Tetrabranchiate Cephalopods are in substance the same as some which formed part of two lectures which I delivered in the autumn of 1841 in the Theatre of the Literary and Philosophical Society of Newcastle-upon-Tyne.

* The characters of these genera and the evidences of their marsupial nature will be the subject of a future communication.